

**Listing of Claims:**

Claims 1-144 (Cancelled)

Claim <sup>1</sup>145 (Currently Amended)

A method for mapping a heart comprising the steps of:  
inserting a mapping catheter, having a tip and an ultrasonic position sensor located at the tip, into the heart;  
inserting at least one reference catheter having an ultrasonic position sensor into the heart;  
placing the tip of the mapping catheter on a surface of the heart at a plurality of points in time of a cardiac cycle;  
determining the position of the mapping catheter relative to the at least one reference catheter using the ultrasonic position sensors by making a geometric snapshot of the heart during each point in time of the cardiac cycle; and  
mapping the surface of the heart with the mapping catheter and making a map comprised of each geometric snapshot.

Claim 146. (Canceled)

Claim 147. (Canceled)

<sup>2</sup>  
Claim ~~148~~. (Currently Amended)

<sup>1</sup>  
The method according to Claim ~~145~~, further comprising mapping electrical activity of ~~the~~ a portion of the heart with at least one electrode mounted at the tip of the mapping catheter.

Claim 149. (Canceled)

<sup>8</sup>  
Claim ~~150~~. (Currently Amended)

<sup>1</sup>  
The method according to Claim ~~145~~, further comprising performing a therapeutic procedure on ~~the~~ a portion of the heart.

Serial No. 09/783,150

Claim <sup>7</sup>151. (Original)

<sup>6</sup>  
The method according to Claim ~~150~~, further comprising performing an ablation procedure on the portion of the heart.

Claim <sup>3</sup>~~152~~. (Previously Presented)

<sup>2</sup>  
The method according to Claim ~~148~~, further comprising measuring impedance of the portion of the heart.

Claim <sup>4</sup>~~153~~. (Previously Presented)

<sup>2</sup>  
The method according to Claim ~~148~~, further comprising measuring mechanical information of the portion of the heart.

<sup>5</sup>  
Claim ~~154~~. (Original)

<sup>4</sup>  
The method according to Claim ~~153~~, further comprising measuring movement of the portion of the heart.

<sup>8</sup>  
Claim ~~155~~. (Currently Amended)

A method for mapping a heart comprising the steps of:  
inserting a mapping catheter, having a tip and an ultrasonic position sensor located at the tip, into the heart;  
inserting at least one reference catheter having an ultrasonic position sensor outside of the heart;  
placing the tip of the mapping catheter on a surface of the heart at a plurality of points in time of a cardiac cycle;  
determining the position of the mapping catheter relative to the at least one reference catheter using the ultrasonic position sensors by making a geometric snapshot of the heart during each point in time of the cardiac cycle; and  
mapping the surface of the heart with the mapping catheter and making a map comprised of each geometric snapshot.

Claim 156. (Canceled)

Claim 157. (Canceled)

9  
Claim 158. (Currently Amended)

8  
The method according to Claim 155, further comprising mapping electrical activity of ~~the~~ a portion of the heart with at least one electrode mounted at the tip of the mapping catheter.

Claim 159. (Cancelled)

13  
Claim 160. (Currently Amended)

8  
The method according to Claim 155, further comprising performing a therapeutic procedure on ~~the~~ a portion of the heart.

14  
Claim 161. (Original)

13  
The method according to Claim 160, further comprising performing an ablation procedure on the portion of the heart.

10  
Claim 162. (Previously Presented)

9  
The method according to Claim 158, further comprising measuring impedance of the portion of the heart.

11  
Claim 163. (Previously Presented)

9  
The method according to Claim 158, further comprising measuring mechanical information of the portion of the heart.

12  
Claim 164. (Original)

11  
The method according to Claim 163, further comprising measuring movement of the portion of the heart.

15  
Claim 165. (Currently Amended)

A method for mapping a heart comprising the steps of:

- (a) inserting a mapping catheter, having a tip and an ultrasonic position sensor located at the tip, into the heart;
- (b) inserting at least one reference catheter having an ultrasonic position sensor into the heart;

- (c) bringing the tip of the mapping catheter into contact with a wall of the heart at a location at a point in time of a cardiac cycle;
- (d) determining a position of the tip of the mapping catheter at the location using the ultrasonic position sensors and making a geometric snapshot of the wall of the heart;
- (e) moving the tip of the mapping catheter to a second location at another point in time of the cardiac cycle and making a second geometric snapshot of the wall of the heart; and
- (f) making a map of the wall of the heart based on the geometric snapshots by repeating steps (d) - (e).

*Cl. 166*  
Claim 166 (Canceled)

*16*  
Claim ~~167~~. (Currently Amended)

*15*  
The method according to Claim ~~165~~, further comprising mapping electrical activity of ~~the~~ a surface of the heart with at least one electrode mounted at the tip of the mapping catheter.

*18*  
Claim ~~168~~. (Currently Amended)

*15*  
The method according to Claim ~~165~~, further comprising performing a therapeutic procedure on ~~the~~ a surface of the heart.

*19*  
Claim ~~169~~. (Original)

*18*  
The method according to Claim ~~168~~, further comprising performing an ablation procedure on the surface of the heart.

*17*  
Claim ~~170~~. (Previously Presented)

*16*  
The method according to Claim ~~167~~, further comprising measuring impedance of the surface of the heart.

*20*  
Claim ~~171~~. (Currently

Serial No. 09/783,150  
Amended)

15  
The method according to Claim 165, further comprising  
measuring mechanical information of ~~the~~ a surface of the heart.

21  
Claim 172. (Original)

20  
The method according to Claim 171, further comprising  
measuring movement of the surface of the heart.

22  
Claim 173. (Currently  
Amended)

A method for mapping a heart comprising the steps of:

- (a) inserting a mapping catheter, having a tip and an ultrasonic position sensor located at the tip, into the heart;
- (b) inserting at least one reference catheter having an ultrasonic position sensor outside of the heart;
- (c) bringing the tip of the mapping catheter into contact with a wall of the heart at a location at a point in time of a cardiac cycle;
- (d) determining a position of the tip of the mapping catheter at the location using the ultrasonic position sensors and making a geometric snapshot of the wall of the heart;
- (e) moving the tip of the mapping catheter to a second location at another point in time of the cardiac cycle and making a second geometric snapshot of the wall of the heart; and
- (f) making a map of the wall of the heart based on the geometric snapshots by repeating steps (d) - (e).

CI Cont.  
Claim 174. (Canceled)

23  
Claim 175. (Currently  
Amended)

22  
The method according to Claim 173, further comprising  
mapping electrical activity of ~~the~~ a surface of the heart  
with at least one electrode mounted at the tip of the  
mapping catheter.

Serial No. 09/783,150  
Claim 176. (Currently  
Amended)

26  
Claim 177. (Original)

24  
Claim 178. (Previously  
Presented)

27  
Claim 179. (Currently  
Amended)

28  
Claim 180. (Original)

22  
The method according to Claim 173, further comprising  
performing a therapeutic procedure on ~~the~~ a surface of the  
heart.

25  
The method according to Claim 176, further comprising  
performing an ablation procedure on the surface of the  
heart.

23  
The method according to Claim 175, further comprising  
measuring impedance of the surface of the heart.

22  
The method according to Claim 173, further comprising  
measuring mechanical information of ~~the~~ a surface of the  
heart.

27  
The method according to Claim 179, further comprising  
measuring movement of the surface of the heart.